

**Abstract**

A wireless communication system includes a satellite constellation consisting of a plurality of satellites. Each of the plurality of satellites is in an orbit whose eccentricity and inclination are 5 perturbed relative to the same geosynchronous orbit. Each of the satellites in the constellation is capable of relaying signals in either direction between a central ground hub and a plurality of mobile user terminals. The plurality of satellites 10 are configured such that the period of their geosynchronous orbit remains substantially constant at one sidereal day.